

Applicants: Richard Axel and Kristin Scott  
Serial No.: 10/081,816  
Filed: February 22, 2002  
Page 10

**REMARKS**

Claims 57-62 and 65-73 were pending and under examination in the subject application. Applicants have canceled claims 57 and 58 without disclaimer or prejudice to their right to pursue the subject matter of these claims in the future. Applicants have also amended claim 59 to more particularly point out that which the applicants regard as the invention. Support for amended claim 59 can be found in the specification at, *inter alia*, page 31, lines 11-20, page 46, lines 23-26, and page 48, lines 16-19. Claims 60, 62 and 65 have been amended such that they do not depend on canceled claims 57 and 58. Accordingly, upon entry of this Amendment, claims 59-62 and 65-73 will be pending and under examination.

**Rejection under 35 U.S.C. §101**

The Examiner rejected claims 57-62 and 65-73 under 35 U.S.C. §101 as allegedly drawn to an invention with no apparent or disclosed specific, substantial and credible utility. Specifically, the Examiner alleges that the subject application does not identify a particular compound or class of compounds that activate or inhibit a Gr63F1 protein, nor does it disclose with specificity the consequence of that activation or inhibition.

In response to the rejection of claims 57 and 58, applicants note that these claims have been canceled without disclaimer or prejudice to their right to pursue the subject matter of the claims in the future. Accordingly, the Examiner's rejection of these claims is moot.

Applicants: Richard Axel and Kristin Scott  
Serial No.: 10/081,816  
Filed: February 22, 2002  
Page 11

In response to the rejection of the remaining claims, applicants note that claim 59 has been amended to recite an isolated nucleic acid encoding an insect receptor protein, wherein the nucleic acid molecule encodes a protein comprising consecutive amino acids having a sequence identical to that set forth for Gr63F1 in SEQ ID NO: 12. Pending claims 60-62 and 65-73 depend on amended claim 59.

M.P.E.P. 2107(II) states that once a *prima facie* showing of no specific and substantial credible utility has been established, which applicants do not concede, applicants can rebut the showing by submitting a "patent or printed publication that rebuts the basis or logic of the *prima facie* showing."

In response, applicants submit as **Exhibit A** a copy of Jones, et al. ("Two chemosensory receptors together mediate carbon dioxide detecting in *Drosophila*" *Nature* 445(7123):86-90 (Jan. 4, 2007)).

Jones, et al. establishes that the *Drosophila* receptor Gr63a and its homologs in other insects play a role in carbon dioxide detection. Applicants note that blood-feeding insects locate hosts via detection of carbon dioxide. Therefore the Gr63a receptor and its homologs have great potential for developing methods of pest and disease control. Applicants further submit as **Exhibit B** the NCBI entry for the Gr63a receptor which sets forth its amino acid sequence. Applicants note that the amino acid sequence of the Gr63a receptor is identical to the amino acid sequence of Gr63F1 (SEQ ID NO:12) recited in amended claim 59.

Accordingly, because it has been established that Gr63F1 plays a role in detecting carbon dioxide in insects, applicants maintain

Applicants: Richard Axel and Kristin Scott  
Serial No.: 10/081,816  
Filed: February 22, 2002  
Page 12

that the claimed invention has a specific and substantial credible utility. Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §101.

**Rejection under 35 U.S.C. §112, First Paragraph**

The Examiner rejected claims 57-62 and 65-73 under 35 U.S.C. §112, first paragraph, as allegedly failing to teach how to use the claimed invention (which applicants understand as an assertion that the specification does not teach a use for the claimed subject matter). The Examiner stated that the reasons for this rejection are the same as those set forth in support of the rejection under 35 U.S.C. §101.

In response to the rejection of claim 57 and 58, applicants note that these claims have been canceled without disclaimer or prejudice to their right to pursue the subject matter of the claims in the future. Accordingly, the Examiner's rejection of these claims is moot.

In response to the rejection of the remaining claims, applicants direct the Examiner to their comments above, and again maintain that a specific and substantial credible utility for the claimed invention has been established, i.e., the role of Gr63F1 in carbon dioxide detection. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §112, first paragraph.

Applicants: Richard Axel and Kristin Scott  
Serial No.: 10/081,816  
Filed: February 22, 2002  
Page 13

**Supplemental Information Disclosure Statement**

This Information Disclosure Statement is submitted to supplement the Information Disclosure Statements filed June 10, 2002 and September 8, 2004. In accordance with their duty of disclosure under 37 C.F.R. §1.56, applicants direct the Examiner's attention to the following references which are also listed on the attached Form PTO-1449 attached hereto as **Exhibit C**.

1. Jones, et al. "Two chemosensory receptors together mediate carbon dioxide detecting in *Drosophila*" *Nature* 445(7123):86-90 (Jan. 4, 2007) (**Exhibit A**); and
2. Printout of NCBI Accession No. DQ989012; nucleotide and amino acid sequences for *Drosophila melanogaster* gustatory receptor 63a (Gr63a) (**Exhibit B**).

Applicants request that the Examiner consider these references, initial the attached Form PTO-1449 and make the references of record in the subject application.

This Supplemental Information Disclosure Statement is being submitted pursuant to 37 C.F.R. §1.97(b)(4) before the mailing of a first Office Action on the merits after the filing of a request for continued examination. Therefore, no fee is deemed necessary with the filing of this Supplemental Information Disclosure Statement.

Applicants: Richard Axel and Kristin Scott  
Serial No.: 10/081,816  
Filed: February 22, 2002  
Page 14

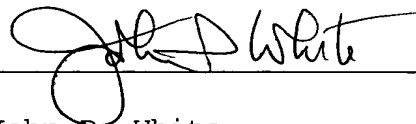
**Summary**

In view of the amendment to claim 59 and the preceding remarks, applicants maintain that the pending claims are in condition for allowance, and respectfully request that the Examiner issue a notice of allowance.

If a telephone interview would be of assistance in advancing the prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

No fee, other than the enclosed \$230.00 fee for a two-month extension of time and the \$405.00 fee for filing an RCE, is deemed necessary in connection with the filing of the Communication. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

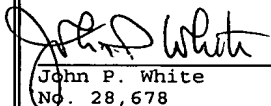
Respectfully submitted,



John P. White  
Registration No. 28,678  
Attorney for Applicants  
Cooper & Dunham LLP  
1185 Avenue of the Americas  
New York, New York 10036  
(212) 278-0400

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

 2/1/08  
John P. White Date Reg.  
No. 28,678